

# Update of Cooperative Projects in WV Eastern Panhandle

- Berkeley County Water Resources Assessment and Fracture-Trace Analysis
- Jefferson County Water Resources Assessment and Fracture-Trace Analysis
- Morgan County Water Resources and Water Quality Assessment

# Eastern Panhandle Planning Challenges

- Population Growth—Rates vs. Numbers
- Urbanization versus Suburbanization
- Sprawl Corridors
- Existing Infrastructure Aging, Failing, and Inadequate
- Sensitive Geohydrologic Settings
- Remote Seasonal Home Construction
- Paucity of Data Available

# Berkeley County Water Resources Assessment

Purpose: To Assess  
Carbonate Aquifer  
Characteristics with  
Respect to Lineament  
Features

# Berkeley County Water Resources Assessment

- Fracture-trace delineation complete
- Aquifer characterization
  - Field work—200 pumping tests completed
  - Data analysis and interpretation is ongoing
  - Report being drafted

# Jefferson County Water Resources Assessment

- County-wide fracture-trace delineation and analysis of aquifer hydraulic properties at 200 sites in karst terrain in cooperation with Jefferson County Commission
- Charles Town and Ranson invited to participate



# Preliminary Lineaments mapped by the USGS in Berkeley County in 2003



**DRAFT LINEAMENTS**

## EXPLANATION

-  USGS Lineaments
-  Fractures from Hobba
-  Faults from 1968 Geology of WV

## Geology of Berkeley County

### MAP\_UNIT

-  Cc
-  Ce
-  Db
-  Dbh
-  Dch
-  Dhs
-  Dmn
-  Dmt
-  Dohl
-  Mp
-  Ob
-  Obps
-  Obr
-  Obs
-  Om
-  Omc
-  Osp
-  Otbr
-  Qal
-  Smc
-  St
-  Stw



# Jefferson County Water Resources Assessment Progress

- Site location and permission under way
- Intensive field activities beginning this summer, continuing through fall
- Fracture-trace analysis under way

# Morgan County Water Resources Assessment

- Cooperative Project with Eastern Panhandle Conservation District to characterize aquifer systems in Morgan County
- Hydraulic properties, major-ion chemistry, nutrients, and bacteria at 90 sites throughout county
- Trace metals (Ba, As, Al, Zn, and Br) and Ra-222 at 15 select sites



# Morgan County Water Resources Assessment Progress

- Over 550 new wells drilled in the county during the past 5 years
- Intensive effort ongoing to identify sites
- Conduct testing and sampling for 60% of sites this summer
- Ongoing coordination with cooperator, and other federal, state, and local partners and participants, e.g. NRCS, WVU, RWC

# In Summary

These cooperative projects, with the Leetown Project, will provide an improved regional characterization of the karst and other aquifer systems in West Virginia's eastern panhandle for planners and the public they serve.

